REMARKS/ARGUMENTS

Claims 51-93 are pending in this application. No new matter has been added. Assignee respectfully requests reconsideration of the claims in view of the new claims, and the comments below.

The 35 U.S.C. §112, first paragraph Claim Rejections

Written Description

Claims 51-78, 82-88, and 93 were rejected pursuant to 35 U.S.C. §112 first paragraph for failing to comply with the written description requirement. The office action takes issue with three features of Claim 51 and one feature of Claim 54. In particular, the office action asserts that there is subject matter in claims 51 and 54 which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor at the time the application was filed had possession of the claimed invention.

Controlling Law

To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention. (MPEP 2163(1)). The subject matter of the claim *need not be described literally* in order for the disclosure to satisfy the description requirement. (MPEP 2163.02). Neither is a specification required to describe limitations in greater detail than the invention warrants. *See Martin v. Mayer*, 953 F.2d 500 (Fed. Cir. 1987). Accordingly, the application complies with the written description requirement when the disclosure *reasonably conveys* that the inventor had possession of the invention, regardless of the presence or absence of literal support for the language used in the claims. *In re Kaslow*, 707 F.2d 1366 (Fed. Cir. 1983) *(emphasis Assignee's)*. Possession of the claimed invention is demonstrated when the words, structures, figures, diagrams, and other descriptive aspects of the application fully set forth the claimed invention. (MPEP 2163.02).

Furthermore, "[a] description as filed is presumed to be adequate unless or until sufficient evidence or reasoning to the contrary has been presented by the examiner to rebut the presumption." MPEP 2163(III)(a). In addition, "[p]rior to determining whether the disclosure

satisfies the written description requirement for the claimed subject matter, the examiner should review the claims and the *entire specification*, including the specific embodiments, figures, and sequence listings, to understand how Assignee provides support for the various features of the claimed invention." (MPEP 2163 (II)(a)(2)) (*emphasis Assignee's*). Assignee respectfully submits that Claims 51-78, 82-88, and 93 reasonably convey that the inventor had possession of the invention at the time of filing because the detailed description and Figures fully describe the claimed invention with all of its features.

Initial Considerations

In its §112 analysis, the office action asserts in several instances that certain application disclosure "is not equivalent to" a specific claimed feature. However, no such test is applicable for the written description requirement of §112. Accordingly, the Assignee respectfully requests withdrawal of the §112 rejections premised on the "is not equivalent to" analysis. Independent rationales for withdrawing the §112 rejections are set out below.

Argument re: "Sequentially converting…." in Claim 51

At least Figures 5 and 12 and pages 8-10 of the specification describe "sequentially converting a buffered acoustic signal to a plurality of frames in a frequency domain, each frame comprising an array of frequency magnitude bins." For example, conversion of multiple sequential segments of an acoustic signal to the frequency domain, the resulting frequency bins, and related analysis is described throughout the specification, such as on page 8 line 7 through page 9 line 27. Figure 12 specifically shows examples of 16-sample sequential segments (segments 1204 and 1206) that are converted to the frequency domain and corresponding magnitude bins. The associated description on page 8, lines 14 - 27 elaborates on the conversion process. Page 10, lines 11-25 provide another example of repeated conversion of a buffered acoustic signal to multiple frames in a frequency domain: "a FFT is run once every 4096 samples, and produces 4096 bins per FFT frame." Accordingly, every time the FFT runs on the next batch of 4096 signal samples, another set of frequency bins results. The office action has noted this process in part, but has not taken into consideration that the FFT runs once every 4096

samples, resulting in a sequential conversion (4096 samples at a time) of an acoustic signal into frames in the frequency domain.

These examples given above demonstrate, in a manner that a person of ordinary skill in the art would appreciate, that the inventor had possession of the recited subject matter at the time the application was filed. In other words, the application as filed fully describes "sequentially converting a buffered acoustic signal to a plurality of frames in a frequency domain, each frame comprising an array of frequency magnitude bins." Given the explicit disclosure in the application, there is no reason why a person skilled in the art at the time the application was filed would have failed to recognize that the inventor was in possession of the claimed invention.

Argument re: "Comparing a first value...." in Claim 51

At least Figures 6, 7a, and 7b and pages 11-13 fully describe "comparing a first value of a first frequency magnitude bin that is included in a first frame with a second value of the first frequency magnitude bin that is included in a second frame". For example, Figure 6 has an entry point labeled "Enter with New value from FFT" and at (602) compares the New value to an Old value. In other words, Figure 6 by itself visualizes a process in which a first value ("Old") of a frequency magnitude bin is compared to a second value ("New") of a frequency magnitude bin. Page 11, lines 13 - 16 of the specification, in reference to Figure 6, specifically note that the values compared are the values of frequency magnitude bins from a new FFT frame against *the previous value* from a *prior* FFT frame. It follows that not only are there multiple frames (e.g., a first and second frame such as a current and prior frame), but also that in the example given, a particular value in a first frame is compared against its previous value in a second (e.g., a past) frame.

Accordingly, the application explicitly discloses the claimed feature of "comparing a first value of a first frequency magnitude bin that is included in a first frame with a second value of the first frequency magnitude bin that is included in a second frame." As noted above, it is only necessary that the application *reasonably convey* that the inventor has possession of the invention. The Assignee respectfully submits that the explicit disclosure provided in the application not only meets but far exceeds this requirement.

Argument re: "Selecting the first frequency...." in Claim 51

A person of ordinary skill in the art upon reviewing at least Figures 5-9 and pages 10-16 of the specification would conclude that "selecting the first frequency magnitude bin to be a candidate frequency" is clearly conveyed and fully described by at least Figures 5-9 and pages 10-16. Page 10, lines 6-7 note that Figure 5 illustrates in detail a "candidate frequency selection process." Page 15, lines 1-3 note that at (512) in Figure 5, the process applies a threshold detection and that the frequency "prominences" that pass the threshold detection (512) are *selected as candidate frequencies*.

Figure 5 shows that the frequency prominences arrive at (512) because they were identified in the "ballistics" process (508) and passed through the prominence search routine (510). Page 11, lines 8-9 state that in (508) a ballistics process is applied. Page 11, lines 13-14, note that Figure 6 is an example of such a ballistics process. Figure 6 and its supporting description was described above with respect to the "comparing" feature regarding the first and second values, and provides the backdrop that explicitly sets forth the determination of values (e.g., an "OLD_VALUEs" as it is referenced in the specification), including comparison and increasing of such values. Page 13, lines 2-10 note that the highest values, termed "prominences" are selected in (510) and passed to the threshold detection (512) for potential *selection as candidate frequencies*. Therefore, "selecting the first frequency magnitude bin to be a candidate frequency" has explicit support in the specification.

The Assignee therefore respectfully requests withdrawal of the §112 rejection with respect to this feature.

Argument re: "Selecting the first frequency...." in Claim 54

Claim 54 has been amended to clarify the selection technique and recites "determining that the first value is at least a predetermined magnitude". Page 13, lines 8-14 provide explicit support for this feature. Accordingly, Assignee respectfully requests withdrawal of the §112 rejection with respect to this feature.

Argument re: Claims 63, 78, 82, 85, 93, and 52-62, 64-77, 83-88

The office action, at page 6, rejects Claims 63, 78, 82, 85, and 93 "for the same reasons stated above" with regard to Claims 51 and 54. However, as explained above, the Claims 51 and 54 fully satisfy the requirements of §112. Accordingly, Assignee respectfully requests withdrawal of the rejections of claims 63, 78, 82, 85, 93, 52 - 62, 64 - 77, and 83 - 88.

Enablement

Claims 79-81 and 89-92 were rejected under 35 U.S.C. § 112, first paragraph "as based on a disclosure which is not enabling." The Assignee respectfully traverses these rejections for the reasons set out below.

As an initial matter, the Assignee notes that the application puts the claimed inventions on solid ground with regard to many different implementations. One example, shown in Figures 1 and 2, includes a microphone input (102), analog to digital converter (104), and a microprocessor (106) which may be a digital signal processor or other processor. The office action places the enablement rejections in the context of "[h]ow to get values", but it is evident that the microphone and analog to digital converter provide digital samples of an analog signal for the microprocessor to process. The office action also recites "sequentially converting a buffered acoustic signal to a plurality of frames in a frequency domain, each frame comprising an array of frequency magnitude bins" as a concern. Yet, the application at Page 8, lines 7 - 27, explicitly notes that, for example, a Fast Fourier Transform (FFT) routine may achieve such results.

The office action also recites "comparing a first value of a first frequency magnitude bin that is included in a first frame with a second value of the first frequency magnitude bin that is included is a second frame" and "in response to the second value being greater than the first value, increasing the first value as a function of the first value, the second value and a determined filter coefficient" in the context of the enablement rejection. However, the specification and drawings explicitly disclose that a digital signal processor may perform such processing and further provide detailed flow diagrams, such as those in Figures 3, 4, 5, and 6, that show how such processing may be carried out.

One way of approaching the enablement requirement is to determine whether the claimed invention can make and use the invention without undue experimentation. A claim is enabled when one of skill in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation. A patent need not teach, and preferable omits, what is well known in the art. (MPEP 2164.01).

In this instance, the application as filed provides explicit, clear, and understandable disclosure for how to make and use the claimed inventions without undue experimentation. There is no assertion in the office action to the contrary, let alone any reasoned explanation that undue experimentation is required based on a reasoned weighing of factual considerations as the MPEP requires. The Assignee therefore respectfully requests withdrawal of the rejections of claims 79 - 81 and 89 - 92.

SUMMARY

All of the pending claims meet all of the requirements for patentability. Assignee therefore requests withdrawal of the pending rejections and issuance of a notice of allowance. The Examiner is invited to contact the undersigned attorney for the Assignee via telephone if such communication would expedite examination and/or allowance of this application.

Respectfully submitted,

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